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(54) **A device for applying a thermoplastic tape around an object or a stack of objects.**

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Description

The invention relates to a device for applying a thermoplastic tape around an object or a stack of objects, said device comprising at least one set of two tape supply reels arranged at a distance from each other, two tape strainers arranged on the same side of the supply reels and mounted for movement towards and from each other and serving to force towards each other the portions of a tape extending between an object or a stack of objects and the supply reels after said tape has been applied in the form of a substantially U-shaped loop around part of the circumference of the object or stack of objects, said tape consisting of two previously interconnected tape portions, each of which emanates from a respective one of said two supply reels, two clamping faces formed on each one of the tape strainers and facing the other tape strainer, the clamping faces of each tape strainer being spaced apart in a direction transverse to the direction of movement of the tape strainers, a movable stop member having two side plates which are adapted to be inserted between the two tape strainers and are each bounded by a clamping face co-operating with a clamping face of one tape strainer, a clamping face co-operating with a clamping face of the other tape strainer and a supporting face which extends between the clamping faces of the respective side plate in the direction of movement of the tape strainers and faces the other side plate, tape bending-over members of which each one is attached movably to a respective tape strainer, the first one of said bending-over members being mounted on its tape strainer for reciprocation in the direction of movement of the tape strainers in the space confined between the two side plates of the stop member and for movement towards the other tape strainer during its forward stroke, said first bending-over member being provided with side faces adapted to be moved along and at a small distance from the supporting faces of the stop member, a front face extending between said side faces and facing the other tape strainer, a melting through member protruding from said front face towards the other tape strainer and being situated midway between said side faces and a heating element for heating said side faces, said front face and said melting through member, the second one of said bending-over members being movably mounted on the other tape strainer and consisting of two parts adapted to be forced towards the supporting faces of the stop member, said second bending-over member having faces which are movable with respect to the clamping faces of the other tape strainer and by means of which, during operation, tape portions first come into contact with the heated front face of the first bending-over member and thereafter are forced towards the supporting faces of the stop member, and means for moving the tape strainers, the stop member, the first bending-over member with the melting-through member and the second bending-over member in a given order of succession.

A device of this kind is known from the U.S. patent specification 4.209.958. In the device according to this patent specification the tape end portions to be bent-over by the second tape bending-over member come into contact with and are heated by the first tape bending-over member when in an oblique position in respect to the direction of movement of the tape strainers and they can only be bent-over by the second bending-over member from that oblique position onto the tape end portions which are already bent-over and heated by the first tape bending-over member, after the latter member has been retracted over a distance which is at least equal to the length of the overlapping area of the tape end portions to be welded together. This has the disadvantages that the heated surfaces of the tape end portions are exposed temporarily to the ambient air before being forced one onto the other, whereby cooling of the melted surface layer of the tape end portions before the welding thereof may occur which could affect the strength of the joint, and further that the tape end portions already bent-over by the first tape bending-over member come to lie temporarily loose against the supporting faces of the stop member, whereby crinkling of said tape end portions may occur before the joints are made.

The invention has for its object to provide a device of the type referred to, in which the disadvantages of the known device are avoided. This is achieved in that the second tape bending-over member is also mounted on its tape strainer for reciprocation in the direction of movement of the tape strainers in the space confined between the two side plates of the stop member and the parts of the second tape bending-over member are each provided with a front face which is and remains during operation, substantially parallel to the front face of the first tape bending-over member and with a side face which is and remains substantially parallel to the supporting faces of the stop member, the second tape bending-over member being, during operation, so moved in respect of its tape strainer as to closely follow the first tape bending-over member during the latters return stroke through said space and to keep, for welding the heated and bent-over tape end portions to one another in pairs, the side faces of its two parts resiliently forced towards the respective supporting faces of the stop member by means for pressing said side faces of the second tape bending-over member towards the support faces of the stop member. In this improved device the disadvantages of the pivotable parts of the second bending-over member of the known device, of which the pivots remain in place during the welding operation, are avoided, since during the return stroke of the first bending-over member and the forward stroke of the second bending-over member which then closely follows said first member the end portions of the second tape are held in contact with the heated front face of the first bending-over member and

portion by portion pressed onto the end portions of the other tape by the side faces of the second bending-over member immediately after the latter tape end portions are set free by the returning first bending-over member. This ensures that the fused areas of the respective tape end portions are pressed together when still in suitably melted state and that crinkling of said end portions can not occur, so that reliable joints are obtained and, moreover, less heat for the welds is required, which is also favourable for the strength of the joints.

It is observed that the tape applying device disclosed in Patentee's older British specification 1.502.822 also has a second bending-over member which is mounted for reciprocation in the stop member, has side faces and follows the first bending-over member closely during the latter's return stroke. However, this specification does not clearly divulge how only the surface layers of the tape end portions to be welded together facing each other in the joints are to be heated in advance and thereupon pressed one onto the other when still in a suitably melted state.

Advantageously, the device according to the present invention is constructed in such manner as to have at least said side faces and said front face of the first tape bending-over member formed by the outer surface of a bent strip of electrical resistance material forming part of said bending-over member and constituting the heating element, said strip being electrically insulated from the rest of the device and being adapted to be connected to an electric power source. This strip of electrical resistance material then may have midway between the side faces of the first bending-over member a cross rib which protrudes from the front face of said member and forms the melting-through member. In that case a very simple construction is obtained, when said cross rib forming the melting-through member is formed by a forward bend of the strip and said bend has a substantially V-shaped cross-sectional area. The strip of electrical resistance material can be easily mounted in the device and replaced by an other strip to adapt the device to other requirements such as an other width of the tape, an other voltage of the power source, an other required melting temperature, an other required power for the melting of the surface layers of the tape, etc.

The invention will be described by way of example with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of a multiple taping device constructed in accordance with the invention,

Fig. 2 is partially a front view, partially a longitudinal sectional view of the active end parts of two co-operating tape strainers employed in said device, when they are still at a distance from each other,

Fig. 3 is partially a front view, partially a longitudinal sectional view of the two co-operating tape strainers shown in Fig. 1, after they have approached each other as closely as possible,

Figs. 4, 5, 6, 7, 8 are diagrammatical plan views of different positions of the means to bend over and to interconnect the tape end portions obtained after the melting-through of two clamped tape portions and

Fig. 9 is an enlarged exploded perspective view of co-operating parts employed in the device as shown in Fig. 1—8.

Referring to the drawings, reference 1 designates a stationary base frame, 2 a roller track for conveying pallets 3, and 4 two columns mounted on the base frame 1, one on each side of the roller track 2, and adjustable in the height direction. Each column 4 supports four taping devices 5, some of which are omitted. Each taping device 5 comprises a holder which is slidably and fixably arranged on one of the columns 4 and holds a tape supply reel 6, a guide roller 7 and a composite tape strainer 8. Every taping device 5 of one column 4 co-operates with a taping device of the other column. The two co-operating taping devices are located at the same height above the roller track 2.

Initially, in a manner not shown in detail, a tape is stretched between each pair of supply reels 6, this tape being formed by the tape 9 emanating from the supply reels 6 of the respective pair and having their ends interconnected. When a pallet 3 with an object or a stack of objects 10 is displaced in the direction of the arrow 11 in Fig. 1 along the roller track 2, the interconnected tape portions 9 are applied in the form of a U around the stack of objects 10 in the manner shown in that Figure. The supply reels can rotate only against a heavy frictional force so that the tape portions 9 are kept taut.

When the pallet 3 with the objects 10 has arrived at the position shown in Fig. 1, the pallet 3 is retained for a short time and the tape strainers 8 are moved towards one another. Thus the tape portions 9 extending between the stack of objects 10 and the supply reels 6 approach one another along said stack.

The head of the left hand tape strainer is provided with a stop member 13 with two side plates 14 which is mounted for swinging about a horizontal transverse pivot 12 and is held, during the active stroke of said tape strainer, in upwards slanting position out of reach of the tape portions 9 by a spring 15 (Fig. 2, 3). The stop member 13 is resiliently connected with the head of said tape strainer by means of a compression spring 16 which is radially directed in respect of the pivot 12.

From, the diagrammatical Figures 4—8 it appears that the tape strainers 8 are each provided with two clamping faces 17 spaced horizontally apart and the side plates 14 of the stop member 13 have clamping faces 18 which co-operate with the clamping faces 17. Furthermore these side plates are bounded on their sides facing each other by supporting faces 19. During movement of the tape strainers towards one

another each tape portion 9 is stretched between and over the two clamping faces 17 of the respective tape strainer.

The right hand tape strainer is provided with a block 20 having a bevelled guiding face 21 and attached to the stop member 13 is a projection 22 adapted to co-operate with said guiding face. When the tape strainers approach each other the stop member 13, 14 is pushed downwards against the force of the spring 15 by the guiding face 21 and the projection 22 and it is then placed between the tape strainers 8 at some distance from the tape portions 9 which are stretched between the clamping faces 17 of the tape strainers. When thereafter the tape strainers continue to approach each other the stop member 13, 14 is pushed against the force of the spring 16 towards the left hand tape strainer and finally the tape portions 9 are clamped tightly between the clamping faces 17 and 18, each one in two spaced places. This position is diagrammatically shown in Fig. 4. In that position the projection 22 engages a recess on the lower side of the block 20, so that the stop member 13, 14 is locked against upward displacement (Fig. 3).

Mounted in the head of each one of the two tape strainers is a tape bending-over member 23, 24 which is adapted to be displaced in the direction of movement of the tape strainers. The bending-over member 23 of the left hand tape strainer consists of a block, over the front face and the free end portions of the sides of which a bow-shaped strip 25 of electrical resistance material is placed. This strip is attached to the block of the tape bending-over member 23 through a plate of insulating material 26 (Figs. 4—9). The strip 25 forms a heating element and can be inserted into an external electric circuit 29 through insulatedly mounted conductors 27 and bolts 28 (Figs. 2, 3). The resistance strip 25 constitutes the active front face 30 and the faces 31 provided on the sides of the tape bending-over member 23 (Fig. 9). In the middle of its front face 30 the resistance strip 25 is so bent outwards as to form a vertical cross rib 32 having a U- or V-shaped cross sectional area. This cross rib constitutes a melting-through member for melting the tape portions 9 held between the tape strainers 8 and the stop member 13, 14 midway between the clamping places.

The righthand tape bending-over member 24 consists generally of two brushing and pressing blocks 35 which are pivotally mounted about a vertical pivot 33 and loaded by a compression spring 34. The front faces 36 of said blocks 35 are adapted to the front face 30 of the heating element 25 and co-operate with the latter and the free end portions of the side faces thereof constitute the brushing and press-on faces 37 of said tape bending-over member (Fig. 9).

In the position illustrated in Fig. 4 the tape portions 9 are clamped between the clamping faces 17 of the tape strainers 8 and the clamping faces 18 of the stop member 13, 14 and the two tape bending-over members 23 and 24 are retracted in respect of the tape strainers as far as possible. The front faces 36 of the block 35 of the righthand tape bending-over member 24 lie flush with the clamping faces 17 of the righthand tape strainer, so that the righthand tape portion 9 is in contact with the front faces 36.

After the position shown in Fig. 4 has been reached the lefthand tape bending-over member 23 with its heating strip 25 is moved to the right. This results in that first the lefthand tape portion 9 is melted through in the middle by the melting-through rib 32 (Fig. 5), thereupon the thus formed separated tape end portions 38 are bent by the hot side faces 31, forced against the supporting faces 19 of the side plates 14 of the stop member 13 and on their inner sides superficially melted, and thereafter the righthand tape portion 9 is melted through and the formed separated tape end portions 39 are lightly gripped between the front face 30 of the heating strip 25 and the front faces 36 of the blocks 35, so that these latter tape end portions 39 are superficially melted on their outer sides (Fig. 6).

Upon that the two tape bending-over members 23 and 24 are moved together to the left (Fig. 7), so that the tape end portions 39 are bent by the side faces 37 of the blocks 35 and pressed with their melted faces onto the melted faces of the tape end portions 38, consequently, welded thereto. After the end condition shown in Fig. 8 has been reached, the tape bending-over member 23 with its heating strip 25 is retracted further to the left and the bending-over member 24 with its blocks 35 is moved to the right, until the condition shown in Fig. 4 has been restored.

Finally, the tape strainers with their accessories are moved from each other towards their rest positions out of reach of the track of the objects to be taped and the stop member 13, 14 is pushed upwards by the spring 15. The tape applied around the stack of objects 10 is then closed and a new tape consisting of the tapes emanating from the tape supply reels 6 and welded together is ready to receive the next object or stack of objects to be enlaced.

Claims

1. A device for applying a thermoplastic tape (9) around an object or a stack of objects (10), said device comprising at least one set of two tape supply reels (6) arranged at a distance from each other, two tape strainers (8) arranged on the same side of the supply reels (6) and mounted for movement towards and from each other and serving to force towards each other the portions of a tape (9) extending between an object or a stack of objects (10) and the supply reels (6) after said tape (9) has been applied in the form of a substantially U-shaped loop around part of the circumference of the object or stack of objects (10), said tape (9) consisting of two previously interconnected tape portions, each of which emanates from a respective one of said two supply reels (6), two clamping faces (17) formed on each one of the tape strainers (8) and facing the other

tape strainer (8), the clamping faces (17) of each tape strainer (8) being spaced apart in a direction transverse to the direction of movement of the tape strainer (8), a movable stop member (13) having two side plates (14) which are adapted to be inserted between the two tape strainers (8) and are each bounded by a clamping face (18) co-operating with a clamping face (17) of one tape strainer (8), a clamping face (18) co-operating with a clamping face (17) of the other tape strainer (8) and a supporting face (19) which extends between the clamping faces (18) of the respective side plate (14) in the direction of movement of the tape strainers (8) and faces the other side plate (14), tape bending-over members (23, 24) of which each one is attached movably to a respective tape strainer (8), the first one (23) of said bending-over members (23, 24) being mounted on its tape strainer (8) for reciprocation in the direction of movement of the tape strainers (8) in the space confined between the two side plates (14) of the stop member (13) and for movement towards the other tape strainer (8) during its forward stroke, said first bending-over member (23) being provided with side faces (31) adapted to be moved along and at a small distance from the supporting faces (19) of the stop member (13), a front face (30) extending between said side faces (31) and facing the other tape strainer (8), a melting through member (32) protruding from said front face (30) towards the other tape strainer (8) and being situated midway between said side face (31) and a heating element (25) for heating said side faces (31), said front face (30) and said melting through member (32), the second one of said bending-over members (24) being movably mounted on the other tape strainer (8) and consisting of two parts (35) adapted to be forced towards the supporting faces (19) of the stop member (13), said second bending-over member (24) having faces (36, 37) which are movable with respect to the clamping faces (17) of the other tape strainer (8) and by means of which, during operation, tape portions (39) first come into contact with the heated front face (30) of the first bending-over member (23) and thereafter are forced towards the supporting faces (19) of the stop member (13), and means for moving the tape strainers (8), the stop member (13), the first bending-over member (23) with the melting-through member (32) and the second bending-over member (24) in a given order of succession, characterized in that the second tape bending-over member (24) is also mounted on its tape strainer (8) for reciprocation in the direction of movement of the tape strainers in the space confined between the two side plates (14) of the stop member (13) and the parts (35) of the second tape bending-over member (24) are each provided with a front face (36) which is and remains during operation, substantially parallel to the front face (30) of the first tape bending-over member (23) and with a side face (37) which is and remains substantially parallel to the supporting faces (19) of the stop member (13), the second tape bending-over member (24) being, during operation, so moved in respect of its tape strainer (8) as to closely follow the first tape bending-over member (23) during the latter's return stroke through said space and to keep, for welding the heating and bent-over tape end portions to one another in pairs, the side faces (37) of its two parts (35) resiliently forced towards the respective supporting faces (19) of the stop member (13) by means (34) for pressing said side faces (37) of the second tape bending-over member towards the supporting faces (19) of the stop member.

2. A device as claimed in claim 1, characterized in that at least said side faces (31) and said front face (30) of the first tape bending-over member (23) are formed by the outer surface of a bent strip (25) of electrical resistance material forming part of said bending-over member (23) and constituting the heating element, said strip (25) being electrically insulated (26) from the rest of the device and being adapted to be connected to an electric power source.

3. A device as claimed in claim 2, characterized in that the strip (25) of electrical resistance material has midway between the side faces (31) of the first bending-over member (23) a cross rib (32) which protrudes from the front face (30) of said member (23) and forms the melting-through member.

4. A device as claimed in claim 3, characterized in that the cross rib (32) forming the melting-through member is formed by a forward bend of the strip (25), said bend having a substantially V-shaped cross-sectional area.

Patentansprüche

1. Vorrichtung zum Anbringen eines thermoplastischen Bandes (9) um einen Gegenstand oder Stapel von Gegenständen (10), welche Vorrichtung aufweist: Mindestens eine Gruppe von zwei im Abstand voneinander angeordneten Bandvorratsspulen (6), zwei Bandspanner (8), die auf derselben Seite der Vorratsspulen (6) angeordnet und zu- und voneinander bewegbar gelagert sind und dazu dienen, nach dem Herumlegen des Bandes (9) in Form einer im wesentlichen U-förmigen Schleife um einen Teil des Umfangs des Gegenstandes oder Stapels von Gegenständen (10) die sich zwischen dem Gegenstand oder Stapel von Gegenständen (10) und den Vorratsspulen (6) erstreckenden Teile des Bandes (9) gegeneinander zu drücken, wobei das Band (9) aus zwei zuvor miteinander verbundenen Bandabschnitten besteht, von denen jeder von einer der beiden Vorratsspulen (6) ausgeht, zwei Klemmflächen (17), die an jedem der Bandspanner (8) ausgebildet und dem jeweils anderen Bandspanner (8) zugewendet sind, wobei die Klemmflächen (17) jedes Bandspanners (8) einen Abstand voneinander in Querrichtung zur Bewegungsrichtung der Bandspanner (8) haben, ein bewegliches Anschlagteil (13) mit zwei Seitenplatten (14), die zwischen die beiden Bandspanner (8) einführbar sind und jeweils begrenzt

sind von einer Klemmfläche (18), die mit einer Klemmfläche (17) eines Bandspanners (8) zusammenwirkt, einer Klemmfläche (18), die mit einer Klemmfläche (17) des jeweils anderen Bandspanners zusammenwirkt, und einer Stützfläche (19), die sich zwischen den Klemmflächen (18) der Seitenplatte (14) in der Bewegungsrichtung der Bandspanner (8) erstreckt und der anderen Seitenplatte (14) zugewendet ist, Bandumbiegeteile (23, 24), von denen jedes bewegbar an jeweils einem der Bandspanner (8) befestigt ist, wobei das erste (23) der Umbiegeteile (23, 24) an seinem Bandspanner (8) in der Bewegungsrichtung der Bandspanner (8) in dem zwischen den Seitenplatten (14) des Anschlagteils (13) begrenzten Raum hin- und herbewegbar und in Richtung auf den anderen Bandspanner (8) während seines Vorwärtshubes bewegbar gelagert ist, wobei das erste Umbiegeteil (23) versehen ist mit Seitenflächen (31), die entlang und in kleinem Abstand von den Stützflächen (19) des Anschlagteils (13) bewegbar sind, einer sich zwischen den Seitenflächen (31) erstreckenden und dem anderen Bandspanner (8) zugewendeten Frontfläche (30), einem Durchschmelzteil (32), welches von der Frontfläche (30) gegen den anderen Bandspanner (8) vorsteht und mittig zwischen den Seitenflächen (31) angeordnet ist, und einem Heizelement (25) zum Heizen der Seitenflächen (31), der Frontfläche (30) und des Durchschmelzteils (32), und wobei das zweite der Umbiegeteile (24) beweglich an dem anderen Bandspanner (8) gelagert ist und aus zwei gegen die Stützflächen (19) des Anschlagteils (13) drückbaren Teilen (35) besteht, wobei dieses zweite Umbiegeteil (24) Flächen (36, 37) aufweist, die relativ zu den Klemmflächen (17) des anderen Bandspanners (8) bewegbar sind und durch welche im Betrieb Teile (39) des Bandes zuerst mit der erhitzten Frontfläche (30) des ersten Umbiegeteils (23) in Kontakt kommen und anschließend gegen die Stützflächen (19) des Anschlagteils (13) gedrückt werden, sowie Mittel zum Bewegen der Bandspanner (8), des Anschlagteils (13), des ersten Umlenkteils (23) mit dem Durchschmelzteil (32) und des zweiten Umbiegeteils (24) in einer gegebenen Reihenfolge, dadurch gekennzeichnet, daß das zweite Bandumbiegeteil (24) ebenfalls an seinem Bandspanner (8) in der Bewegungsrichtung der Bandspanner in dem zwischen den beiden Seitenplatten (14) des Anschlagteils (13) begrenzten Raum hin- und herbewegbar gelagert ist und daß die Teile (35) des zweiten Bandumbiegeteils (24) mit je einer Frontfläche (36), die im wesentlichen parallel zu der Frontfläche (30) des ersten Bandumbiegeteils (23) ist und im Betrieb so bleibt, sowie mit einer Seitenfläche (37), die im wesentlichen parallel zu den Stützflächen (19) des Anschlagteils (13) ist und im Betrieb so bleibt, versehen sind, wobei das zweite Bandumbiegeteil (24) im Betrieb derart relativ zu seinem Bandspanner (8) bewegt wird, daß es dem ersten Bandumbiegeteil (23) während dessen Rückhub in dem genannten Raum dicht folgt und zum paarweisen gegenseitigen Verschweißen der erhitzten und umgebogenen Bandenden die Seitenflächen (37) seiner beiden Teile (35) federnd gegen die zugehörigen Stützflächen (19) des Anschlagteils (13) angedrückt hält durch Mittel (34) zum Anpressen der Seitenflächen (37) des zweiten Bandumbiegeteils gegen die Stützflächen (19) des Anschlagteils.

2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß mindestens eine der Seitenflächen (31) und der Frontfläche (30) des ersten Bandumbiegeteils (23) durch die Außenfläche eines gebogenen Streifens (35) aus elektrischem Widerstandsmaterial gebildet sind, welches ein Teil des Umbiegeteils (23) ist und das Heizelement darstellt, wobei der Streifen (25) von dem rest der Einrichtung elektrisch isoliert (26) und an eine elektrische Stromquelle anschließbar ist.

3. Vorrichtung nach Anspruch 2, dadurch gekennzeichnet, daß der Streifen (25) aus elektrischem Widerstandsmaterial mittig zwischen den Seitenflächen (31) des ersten Umbiegeteils (23) eine Querrippe (32) aufweist, die von der Frontfläche (30) des Teils (23) vorsteht und das Durchschmelzteil bildet.

4. Vorrichtung nach Anspruch 3, dadurch gekennzeichnet, daß die Querrippe (32), die das Durchschmelzteil bildet, von einer vorwärts gerichteten Biegung des Streifens (25) gebildet ist, die eine im wesentliche V-förmige Querschnittsfläche hat.

Revendications

1. Dispositif destiné à appliquer un ruban de matière thermoplastique autour d'un objet ou d'un groupe d'objets (10), ledit dispositif comprenant au moins un jeu de deux bobines d'alimentation (6) de ruban disposées à une certaine distance l'une de l'autre, deux tendeurs de ruban (8) disposés du même côté des bobines d'alimentation (6) et montés pour se rapprocher et s'éloigner l'un de l'autre, et qui servent à rapprocher à force l'une de l'autre les parties d'un ruban (9) qui s'étendent entre un objet ou un groupe d'objets (10) et les bobines d'alimentation (6) après que ce ruban (9) a été mis sous la forme d'une boucle à peu près en U autour d'une partie de la circonférence de l'objet ou groupes d'objets (10), ledit ruban (9) étant composé de deux parties de ruban préalablement assemblées, dont chacune provient de l'une des deux bobines d'alimentation citées (6), deux faces de serrage (17) formées sur chacun des tendeurs de ruban (8) et qui font face à l'autre tendeur de ruban (8), les faces de serrage (17) de chaque tendeur de ruban (8) étant espacées dans une direction transversale à la direction du mouvement des tendeurs de ruban (8), un élément de butée mobile (13) possédant deux plaques latérales (14) qui sont adaptées pour être insérées entre les deux tendeurs de ruban (8) et dont chacune est limitée par une face de serrage (16) coopérant avec une face de serrage (17) d'un tendeur de ruban (8), une face de serrage (18) coopérant avec une face de serrage (17) de l'autre tendeur de ruban (8), et une face de support (19)

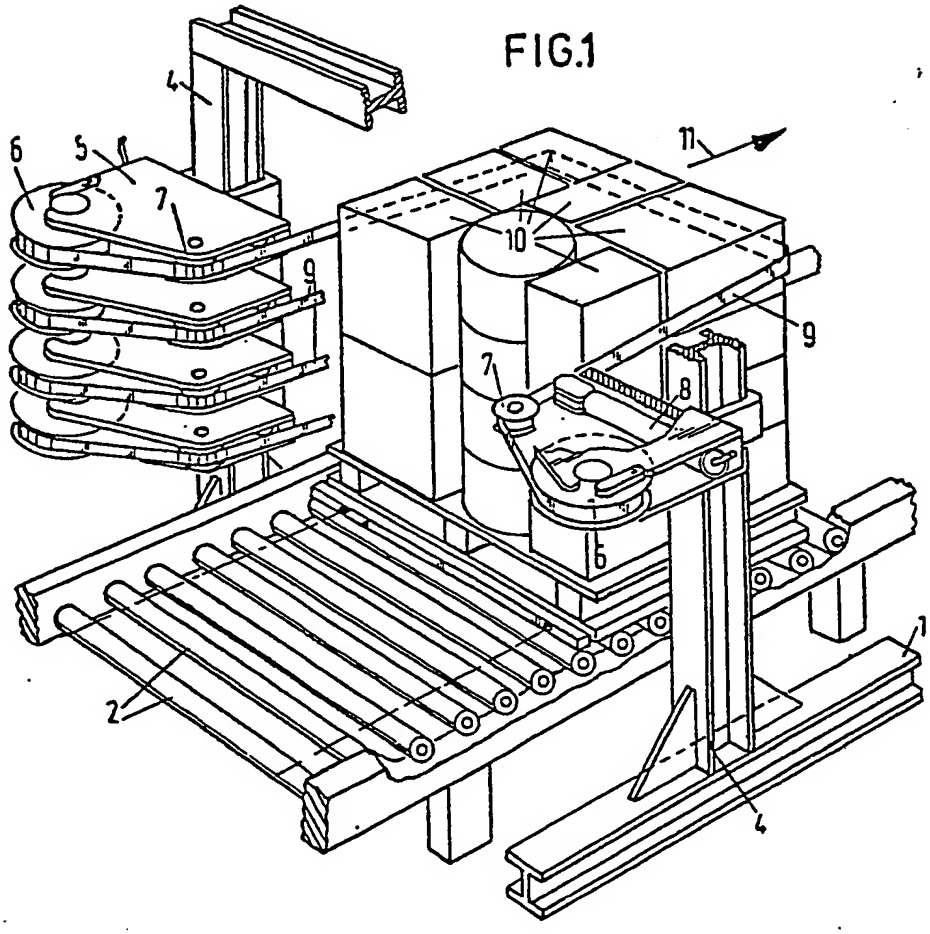
qui s'étend entre les faces de serrage (18) de la plaque latérale (14) respective dans la direction du mouvement des tendeurs de ruban (8) et fait face à l'autre plaque latérale (14), des éléments de repliage de ruban (23, 24) dont chacun est fixé de façon mobile à un tendeur de ruban respectif (8), le premier (23) desdits organes de repliage (23, 24) étant monté sur son tendeur de ruban (8) pour décrire un mouvement alternatif dans la direction du mouvement des tendeurs de ruban (8) dans l'espace compris entre les deux plaques latérales (14) de l'organe de butée (13) et pour se déplacer vers l'autre tendeur de ruban (8) pendant sa course d'avancée, le premier organe de repliage (23) étant muni de faces latérales (31) adaptées pour se déplacer le long et à une petite distance des faces supports (19) de l'organe de butée (13), une face avant (30) s'étendant entre lesdits faces latérales (31) et faisant face à l'autre tendeur de bande (8), un organe de fusion (32) faisant saillie sur ladite face avant (30) vers l'autre tendeur de bande (8) et situé à mi-chemin entre lesdites faces latérales (31), et un élément chauffant (25) servant à chauffer lesdites faces latérales (31), ladite face avant (30) et ledit organe de fusion (32), le deuxième desdits organes de repliage (24) étant monté mobile sur l'autre tendeur de ruban (8) et étant composé de deux parties (35) adaptées pour être poussées à force vers les faces de support (19) de l'organe de butée, ledit deuxième organe de repliage (24) possédant des faces (36, 37) qui peuvent se déplacer par rapport aus faces de serrage (17) de l'autre tendeur de ruban (8) et au moyen desquelles, pendant le fonctionnement, les parties de ruban (39) entrent tout d'abord en contact avec la face avant chauffée (30) du premier élément de repliage (23) et sont ensuite poussées à force vers les surfaces de support (19) de l'élément de butée (13), et des moyens servant à déplacer les tendeurs de ruban (8), l'organe de butée (13), le premier organe de repliage (23) muni de l'organe de fusion (32) et le deuxième organe de repliage (24) dans un ordre de succession donné, caractérisé en ce que le deuxième organe de repliage ou ruban (24) est également monté sur son tendeur de ruban (8) de manière à aller et venir dans le sens du mouvement des tendeurs de ruban dans l'espace compris entre les deux plaques latérales (14) de l'organe de butée (13) et les parties (35) du deuxième organe de repliage de ruban (24) sont munies chacune d'une face avant (30) qui est et reste sensiblement parallèle à la face avant (30) du premier organe de repliage de ruban (23) pendant le fonctionnement, et d'une face latérale (37) qui est et reste sensiblement parallèle aux faces de support (19) de l'organe de butée (13), le deuxième organe de repliage de ruban (24) étant entraîné par rapport à son tendeur de ruban (8) pendant le fonctionnement de manière à suivre exactement le premier organe de repliage de ruban (23) pendant la source de retour de ce dernier dans ledit espace, et pour maintenir, pour le soudage, les parties d'extrémité chauffées et repliées du ruban l'une sur l'autre par paires, les faces latérales (37) de ces deux parties (35) pressées élastiquement vers les faces de support (19) de l'organe de butée (13) par des moyens (34) servant à presser lesdites faces latérales (37) du deuxième organe de repliage de ruban vers les faces de support (19) de l'organe de butée.

2. Dispositif comme revendiqué dans la revendication 1, caractérisé en ce qu'au moins lesdites faces latérales (31) et ladite face avant (30) du premier organe de repliage de ruban (23) sont formées par la surface externe d'une bande recourbée (25) de matière à résistante électrique qui fait partie dudit organe de repliage (23) et constitue l'élément chauffant, ladite bande (27) étant isolée électriquement (26) du reste du dispositif et étant adaptée pour être connectée à une source d'énergie électrique.

3. Dispositif comme revendiqué dans la revendication 2, caractérisé en ce que la bande (25) de matière résistante électrique possède à mi-chemin entre les faces latérales (31) du premier organe de repliage (23) une nervure transversale (32) qui fait saillie sur la face avant (30) dudit élément (23) et forme l'élément de fusion.

4. Dispositif comme revendiqué dans la revendication 3, caractérisé en ce que la nervure transversale (32) qui forme l'organe de fusion est formée par un coude avant de la bande (25), ledit coude possédant une section sensiblement en V.

FIG.1



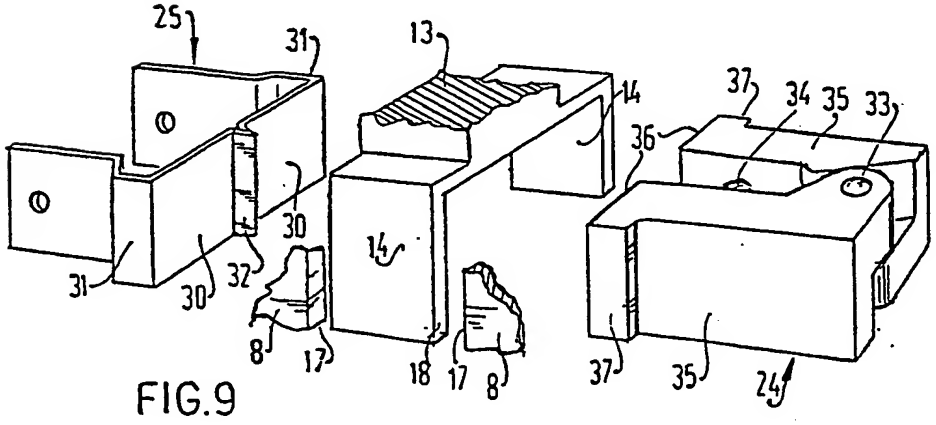


FIG.9

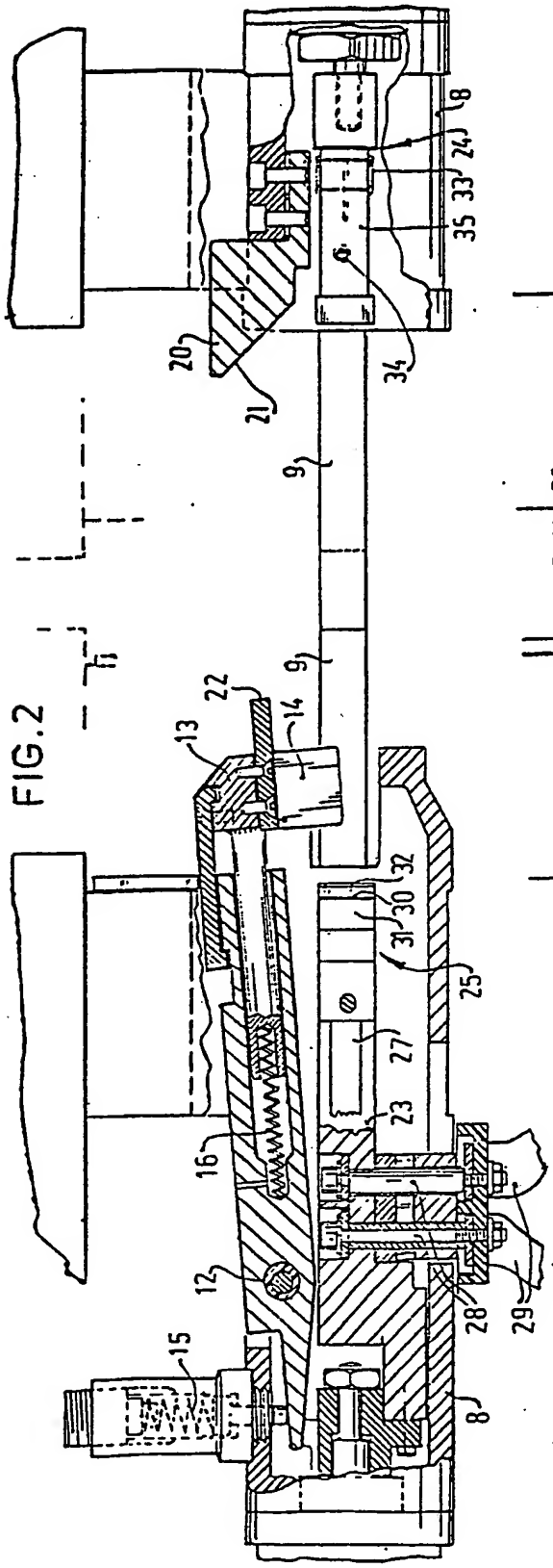


FIG.2

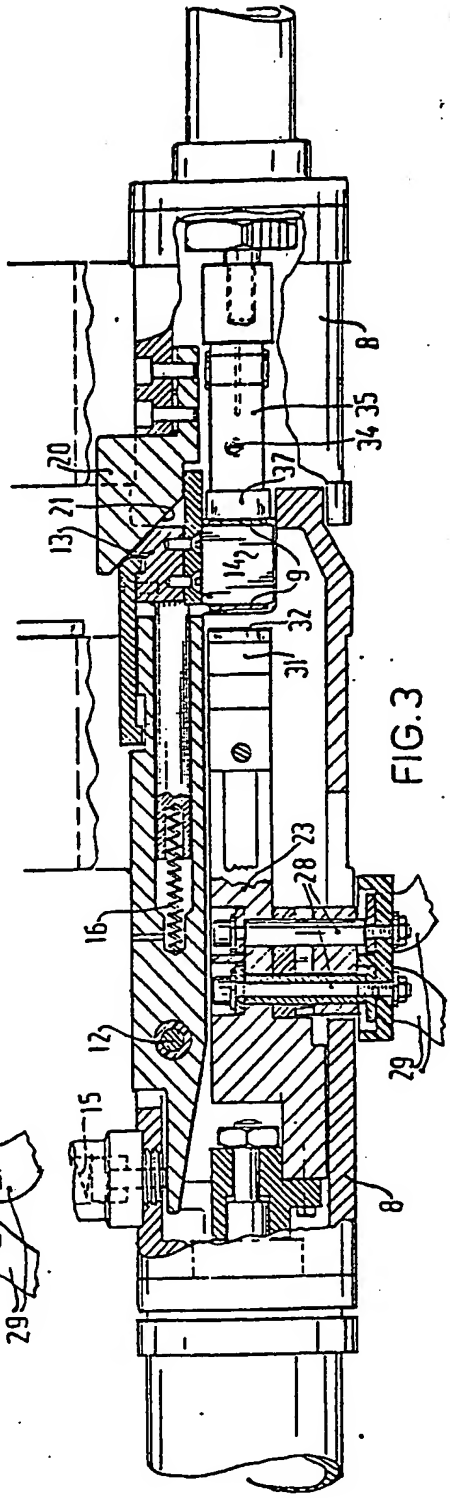


FIG.3

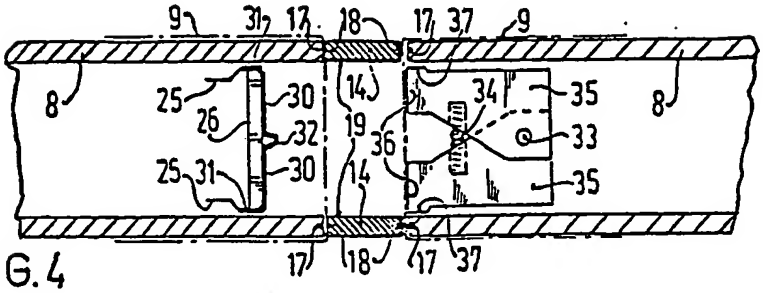


FIG.4

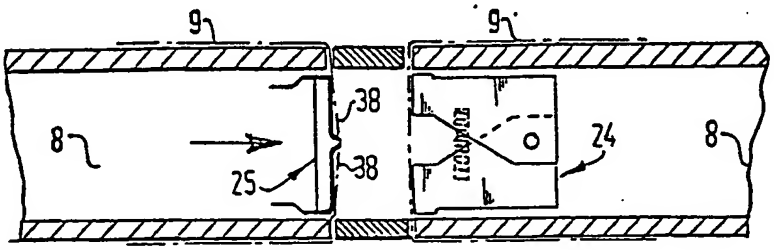


FIG.5

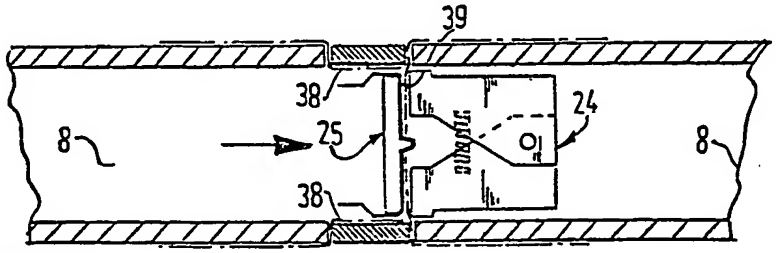


FIG.6

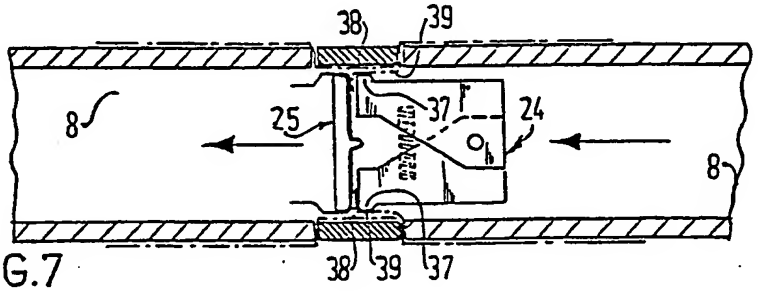


FIG.7

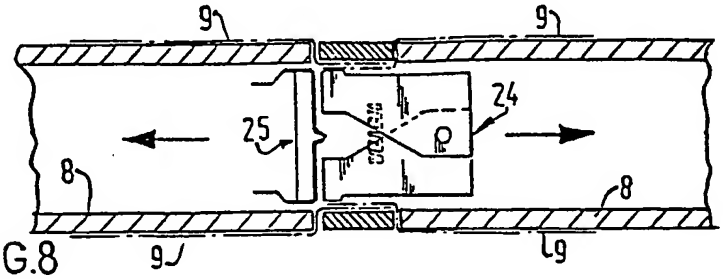


FIG.8